

## REMARKS

In response to the above-identified Office Action, Applicant traverses the Examiner's rejection to the claims and seeks reconsideration thereof. Claims 1-12 are now pending in the present application. In this response, Claim 5 has been amended, no claims have been added and no claims have been cancelled.

### **I. Claim Amendments**

Claim 5 has been amended pursuant to the Examiner's request the Applicant correct language the Examiner finds confusing. Applicant respectfully submits the amendment to Claim 5 does not add new matter and is supported by the specification. Applicant respectfully requests the amendment be entered accordingly.

### **II. Claim Objections**

Claim 5 is objected to because of the following informalities: Language is a bit confusing. As discussed above, Claim 5 has been amended to correct the above noted informality. In view of the foregoing, Applicant respectfully requests withdrawal of the objection to Claim 5.

### **III. Claim Rejections – 35 U.S.C. §103(a)**

The Examiner rejects Claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,372,666 issued to Ramos et al ("Ramos") in view of U.S. Patent No. 6,734,723 issued to Fukumoto ("Fukumoto"). Applicant respectfully traverses the Examiner's rejection for at least the following reasons.

The instant invention is directed to a method of forming a buffer dielectric film in a semiconductor device and manufacturing a thin film transistor using the same, and, more particularly, the above method in which grain size can be maximized, while suppressing the damage of a substrate, by minimizing heat transfer into the substrate, in a procedure of transforming an amorphous silicon layer into a polysilicon layer.

To render a claim obvious, the relied upon references must disclose every limitation of the claim such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art. MPEP §2143. Furthermore, there must be a showing of suggestion or motivation to modify or combine the teachings of those references. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

In regard to Claim 1, Applicant respectfully submits Ramos fails to teach or suggest at least the elements of forming a silicon nitride film on a substrate, forming a porous silica film on said silicon nitride film and forming a silicon oxide film on said porous silica film. The Examiner alleges Ramos (col. 4, lines 15; 25-27) teaches the element of forming a silicon nitride film on a substrate. This portion of Ramos, however, merely discloses depositing a dried nanoporous silica film on a substrate. See Ramos, col. 4, line 15. Although a silicon nitride material is later mentioned (col. 4, lines 23-27), it is described as a suitable material for a pattern of lines formed on the substrate serving as the conductors or insulators of the integrated circuit, not a film formed on the substrate. Thus, at least for the foregoing reasons, Ramos fails to teach or suggest this element. The absence of this element, necessarily prevents Ramos from teaching the formation of a porous silica film on said silicon nitride film and forming a silicon oxide film on said porous silica film.

Fukumoto fails to cure the deficiencies of Ramos. The Examiner admits Ramos fails to teach or suggest forming a silicon oxide film on a porous silica film and instead relies upon Fukumoto (col. 6, lines 40-45) to teach this element. See Action, page 2, paragraph 4. Applicant respectfully disagrees with the Examiner's characterization. The portion of Fukumoto cited by the Examiner teaches that a silicon oxide film is deposited on a silicon nitride film, not a porous silica film. See Fukumoto, col. 6, lines

40-45. Accordingly, the Examiner has not shown that Fukumoto teaches this element. The Examiner has further failed to show, and Applicant is unable to discern, any portion of Fukumoto teaching the remaining elements of Claim 1 not found within Ramos.

Moreover, the Examiner has failed to provide a sufficient motivation for the relied upon combination of Ramos in view of Fukumoto. The Examiner alleges the combination would have been obvious because one of skill in the art would have included a silicon oxide film over the porous film as a buffer layer. Fukumoto teaches a method of fabricating a semiconductor device including an etching process. The silicon oxide film cited by the Examiner is deposited over a silicon nitride film as part of the patterning and dry etching process. See Fukumoto, col. 6, lines 40-65. Ramos teaches a process for forming a dielectric coating on a substrate by suspending the substrate containing the deposited film in a sealable hotplate. See Ramos, Abstract. Ramos neither contemplates nor suggests the desirability of a buffer layer, much less a buffer layer having a silicon oxide film deposited over a porous silica layer. Moreover, Ramos does not teach an etching process. Thus, upon viewing the references, one of ordinary skill in the art would not understand any advantage to combining Ramos and Fukumoto in the manner relied upon by the Examiner. Accordingly, it appears it is only upon viewing Applicant's disclosure that the relied upon combination is understood. As the Examiner is no doubt aware, such hindsight reconstruction is an inappropriate basis for combining references.

For at least the foregoing reasons, neither Ramos nor Fukumoto, alone or in combination, teach or suggest all the elements of Claim 1. Since each and every element of Claim 1 is not taught by the references, a *prima facie* case of obviousness may not be established. Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 1 under 25 U.S.C. §103.

In regard to Claims 2-4, Applicant respectfully submits Claims 2-4 are dependent upon Claim 1 and incorporate the limitations thereof. Thus, for at least the reasons discussed above in regard to Claim 1, the references fail to teach or suggest all the elements of Claims 2-4. Since each element of Claims 2-4 is neither taught nor suggested by Ramos in view of Fukumoto, a *prima facie* case of obviousness may not be established. For the foregoing reasons, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 2-4 under 35 USC §103.

The Examiner rejects Claim 5 under 35 U.S.C. 103(a) as being unpatentable over Ramos in view of Fukumoto as applied to Claims 1-4 and further in view of U.S. Patent No. 6,423,770 issued to Katz ("Katz"). Applicant respectfully traverses the Examiner's rejection for at least the following reasons.

Claim 5 depends from Claim 1 and incorporates the limitations thereof. Thus, for at least the reasons discussed above in regard to Claim 1, neither Ramos nor Fukumoto, alone or in combination, teach the elements of forming a silicon nitride film on a substrate, forming a porous silica film on said silicon nitride film, and forming a silicon nitride film on said porous silica film as found in Claim 5. The Examiner has failed to point to, and Applicant is unable to discern, any portion of Katz teaching these elements. Since the references fail to teach or suggest all the elements of Claim 5, a *prima facie* case of obviousness may not be found. For at least the foregoing reasons, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 5 under 35 U.S.C. §103.

**IV. Allowable Subject Matter**

Applicant respectfully acknowledges the Examiner's recognition that Claims 6-12 are allowed.

### CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely Claims 1-12, are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. Questions regarding this matter should be directed to the undersigned at (310) 207-3800.

### PETITION FOR EXTENSION OF TIME

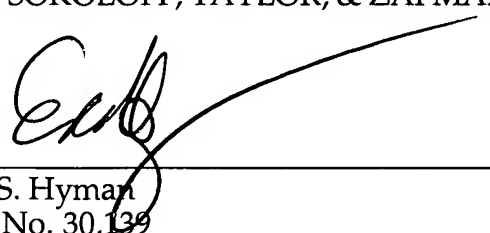
Per 37 C.F.R. 1.136(a) and in connection with the Office Action mailed on February 4, 2005, Applicant respectfully petitions the Commissioner for a one (1) month extension of time, extending the period for response to June 4, 2005. The Commissioner is hereby authorized to charge payment to Deposit Account No. 02-2666 in the amount of \$60.00 to cover the petition filing fee for a 37 C.F.R. 1.17(a)(1) small entity. A duplicate copy of the fee transmittal is enclosed.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN LLP

Dated: May 31, 2005

By: \_\_\_\_\_

  
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### CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 31, 2005.

  
Jean Svoboda